

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 September 2005 (29.09.2005)

PCT

(10) International Publication Number
WO 2005/090554 A1

(51) International Patent Classification⁷: C12N 1/20, 1/21,
C12Q 1/02, 1/68, A61K 35/74, C02F 3/00

(21) International Application Number:

PCT/US2005/008920

(22) International Filing Date: 17 March 2005 (17.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/554,225 17 March 2004 (17.03.2004) US

(71) Applicant (for all designated States except US): **DENOVO BIOLOGIC LLC** [US/US]; 5528 24th Street North, Arlington, VA 22205-3113 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **ROBINSON, Douglas, H.** [US/US]; 5345 Broad Branch Road, N.W., Washington, District of Columbia 20015 (US).

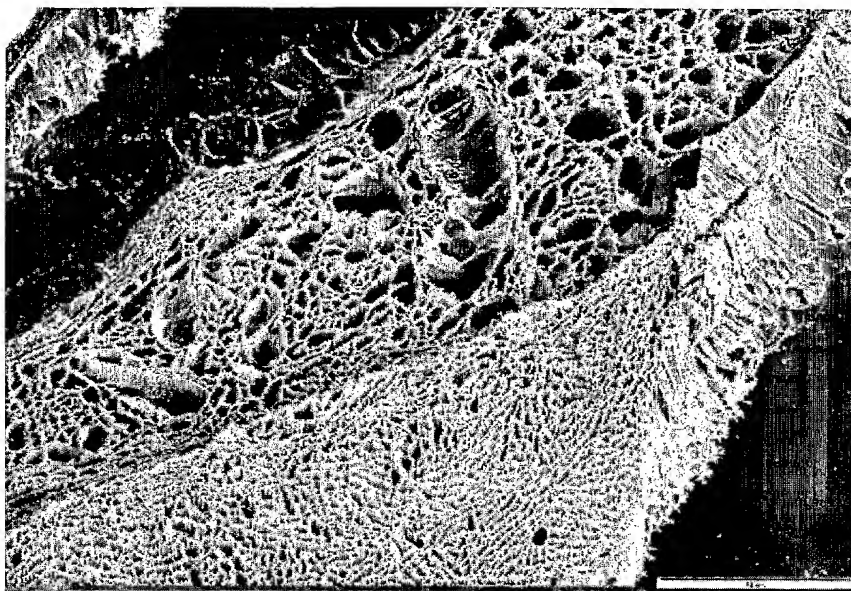
(74) Agents: **BOWDITCH, Mark, I.** et al.; Kenyon & Kenyon, 1500 K Street, NW, Washington, District of Columbia 20005-1257 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: MULTICELLULAR ORGANISMS DERIVED FROM NORMAL/NONDISEASED AND DISEASED MAMMALIAN TISSUES



(57) Abstract: The present invention relates to pleomorphic cells ("morphotes"), which exhibit morphologic and genetic characteristics of both prokaryotic and eukaryotic cells, including resemblance to prokaryotic cells at the unicellular level, and resemblance to eukaryotic cells at the multicellular level due to their ability to self-organize in vitro into multicellular, mammalian tissue-like patterns consisting of tissue-like sheets, capillary-like networks, and trabecular (spongy) bone-like structures. Morphotes have a number of applications in the diagnostic medical, therapeutic medical, biological, biomaterials, bionanotechnological, and industrial fields.

WO 2005/090554 A1

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.